Trial/Pilot Event

B and C Divisions

ENDANGERED, EXTINCT, EXOTIC

1. **DESCRIPTION:** Students will be asked questions about least concern, near threatened, vulnerable, threatened, endangered, critically endangered, extinct in the wild, and extinct vertebrates (refer to the Science Olympiad Taxa List on next page), including probable reasons for their status. Students should be familiar with recent or emerging pathogens (Chytrid fungus, White-nose Syndrome) which are leading to drastic population decline. Students should be familiar with the process of listing animals as endangered and the challenges in doing so. Students will also be asked questions about introduced and invasive (non-native) vertebrates (refer to the Science Olympiad Taxa List on next page), including their probable mode of introduction and their impact on biodiversity.

TEAM OF UP TO: 2 **APPROXIMATE TIME:** 50 MINUTES

2. **EVENT PARAMETERS:** No published reference materials may be used during this competition, although student-made notes on as many as 20 3"x5" cards held together by a ring will be permitted during testing.

3. **THE COMPETITION:**
   a. The event may be run as stations using names, photos, specimens, or drawings of selected vertebrates.
   b. Students will be expected to identify the vertebrate (complete common name) and identify probable cause of population decline.
   c. Students may be asked to identify laws and regulations which apply to endangered species, including but not limited to the Endangered Species Act, the Convention on International Trade in Endangered Species (CITES), and the Lacey Act.
   d. Students will be expected to recognize photos or specimens of vertebrates that are non-native and will be expected to identify the probable mode of introduction and their impact on biodiversity. Students will be expected to identify characteristics of successful non-native species and the damage they may cause.

4. **SCORING:**
   a. Points will be assigned to various questions and problems.
   b. Points will be awarded for both quality and accuracy of the answers, quality of supporting reasoning, and use of proper scientific knowledge.
   c. Highest number of points will determine the winner. Tiebreaker questions may be included in the competition.

5. **SAMPLE PROBLEMS:**
   Station #1: Identify the endangered species represented by the photograph. Describe factors that contributed to population decline for this species.
   Station #2: Which of the three vertebrate species is an exotic species in this region? How did this vertebrate arrive in this region?
   Station #3: Name the national law that prohibits the buying and selling of endangered wildlife. What law protects marine mammals from being trapped, killed, or bought and sold?

RESOURCES: Any current environmental textbook would be a good review for this event. The following websites and their links contain material that may be useful to event supervisors, coaches, and competitors:

www.fws.gov/endangered
www.arkive.org
www.iucnredlist.org
www.seafoodwatch.org
www.worldwildlife.org/species
www.invasivespeciesinfo.gov
www.traffic.org

Trial/Pilot Event

TAXA LIST FOR SCIENCE OLYMPIAD

FISHES
Topeka Shiner (*Notropis topeka)*
Pallid Sturgeon (*Scaphirhynchus albus)*
Paddlefish *(Polyodon spathula)*
Atlantic Bluefin Tuna (*Thunnas thynnus*)
Sharks *(Note: Students will not be asked questions about specific species, rather they will be asked questions about shark species as a whole)*
Atlantic Cod *(Gadus morhua)*
Atlantic Salmon *(Salmo salar)*
Blue Marlin *(Makaira nigricans)*

AMPHIBIANS
Inyo Mountains Salamander (*Batrachoseps campi*)
Wyoming Toad (*Bufo baxteri*)
Mountain Yellow-legged Frog (*Rana muscosa*)
Dusky Gopher Frog (*Rana sevosa*)
Ramsey Canyon Leopard Frog (*Rana subaquavocalis*)
Macaya Burrowing Frog (*Eleutherodactylus parapelates*)
Panamanian Golden Frog (*Atelopus zeteki*)
Puerto Rican Crested Toad *(Peltophryne lemur)*
Japanese Giant Salamander *(Andrias japonicas)*
Table Mountain Ghost Frog *(Heleophryne rosei)*

REPTILES
Sea Turtle *(Note: Students will be asked questions regarding threats facing the species as a whole)*
Jamaican Boa *(Epicrates subflavus)*
Gopher Tortoise *(Gopherus polyphemus)*
American Alligator *(Alligator mississippiensis)*
Indigo Snake (*Drymarchon melanurus)*
Giant Madagascar Leaf-tailed Gecko (*Uroplatus fimbriatus)*
Philipine Crocodile (*Crocodilus mindorensis)*
False Gharial (*Tomistoma schlegelii)*
Ploughshare Tortoise *(Astrochelys yniphora*)
Panther Chameleon *(Furcifer pardalis)*
Giant Garter Snake *(Thamnophis gigas)*
Red River Soft Shell Turtle *(Rafetus swinhoei)*
Cuban Rock Iguana (*Cyclura nublia)*
Grand Caymen Iguana (*Cyclura lewisi)*
Aruba Island Rattlesnake *(Crotalus unicolor)*
King Cobra (*Ophiophagus Hannah)*

MAMMALS
Black-footed Ferret *(Mustela nigripes)*
Polar Bear *(Ursus maritimus)*
African Elephant *(Loxodonta africana)*
Grey Wolf *(Canis lupus)*
Clouded Leopard *(Neofelis nebulosa)*
Tiger *(Note: Students will not be asked to identify tiger subspecies)*
Gorilla *(Gorilla gorilla & G. beringei)*
Orangutan *(Pongo abelii & P. pygmaeus)*
Greater Bamboo Lemur *(Prolemur simus)*
Black Rhinoceros (*Diceros bicornis*)
Little Brown Bat (*Myotis spp.)*

BIRDS
Whooping Crane (*Grus Americana*)
Piping Plover (*Charadrius melodus)*
Least Tern *(Sterna antillarum)*
Eskimo Curlew *(Numenius borealis)*
Trumpeter Swan *(Cygnus buccinator)*
African Penguin *(Spheniscus demersus)*
Galapagos Penguin (*Spheniscus mendiculus)*

INTRODUCED/INVASIVE
Brown Tree Snake *(Boiga irregularis)*
Cane Toad *(Bufo marinus)*
Burmese Python *(Python molurus)*
Nile Monitor *(Varanus niloticus)*
Spectacled Caiman *(Caiman crocodiles)*
Feral Pigs (*Sus scrofa)*
Ring-necked Pheasant *(Phasianus colchicus)*
Lionfish *(Pterois volitans)*
Norway Rat (*Rattus norvegicus)*
Common Grass Carp (*Ctenopharyngodon idella*)
European Starling *(Sturnus vulgaris)*